Financial Reporting and Analysis
Chapter 3 Solutions
Additional Topics in Income Determination
Exercises

E3-1. Revenue recognition before delivery

Requirement 1:
Under the completed-contract method, revenue is recognized when the contract is complete, however expected losses are recognized immediately in their entirety. Since Project 2 is estimated to have a $20,000 loss ($300,000 - $280,000 - $40,000 = $20,000 loss), this loss would be recognized in 2001.

Requirement 2:
For Project 1, $240,000 of the total costs of $360,000 has been incurred, or 2/3 of the total costs. The contract price of $420,000 less estimated costs of $360,000 gives an estimated profit of $60,000. Current profit from Project 1 is then 2/3 times $60,000, or $40,000. Project 2 estimates a $20,000 loss ($300,000 - $280,000 - $40,000) which is recognized immediately. Then by adding these amounts the total gross profit would be $20,000 ($40,000 - $20,000 = $20,000).

E3-2. Determining gross profit using percentage-of-completion

The gross profit for the percentage-of-completion method is as follows:

Contract price		$3,000,000
Cost to date	$1,800,000	
Est. cost to complete	600,000	
Total cost		2,400,000
Expected gross profit		600,000
Percentage complete (18/24)		75%
Profit to date		450,000
Profit previously recognized		(300,000)
2002 gross profit		$ 150,000

E3-3. Determining gross profit using installment sales

Gross profit = Sales - Cost of sales (COS)
2001: [$80,000 - $40,000] = $40,000
2002: [$90,000 - $60,000] = $30,000

Gross profit rate (GP rate) = COS / sales
2001: [$40,000/ $80,000] = 50%
2002: [$30,000/ $90,000] = 33.3%

2001 Deferred gross profit:
Deferred gross profit = GP rate x Accounts Receivable (AR) on 2001 sales @ 12/31/2001
50% x $60,000 = $30,000 Deferred gross profit on 2001 balance sheet

2002 Deferred gross profit:

Deferred gross profit = 2001 GP rate x AR on 2001 sales @ 12/31/2002
50% x $30,000 = $15,000

Deferred gross profit = 2002 GP rate x AR on 2002 sales @ 12/31/2002
33.3% x $69,000 = $23,000

Total deferred gross profit to be reported = $38,000 on 12/31/2002
[$15,000 + $23,000].

E3-4. Determining deferred gross profit using the installment sales method

The total deferred gross profit equals the deferred gross profit from 2000 sales plus the deferred gross profit from 2001sales.

	2001	2000
Sales	$900,000	$600,000
Collections		
2000 sales		(300,000)
2001 sales	(300,000)	
Written off		
2000		(200,000)
2001	(50,000)	
	550,000	100,000
Gross profit %	x 40%	x 30%
Deferred gross profit	$220,000	$ 30,000

Total deferred gross profit = $30,000 + $220,000 = $250,000.

E3-5. Determining realized gross profit using the installment method
Yardley has collected $300,000 on January 2, 2001, and $300,000 from the not (interest is recorded separately). $600,000 x 1/3 profit rate ($500,000 profit on $1,500,000 sale) is $200,000.

E3-6. Determining installment accounts receivable

The installment sales receivable balance is computed below.

	2001	2002
Installment sales	($300,000/.3) = **$1,000,000**	($440,000/.4) = **$1,100,000**
Percentage of gross profit recognized	**0%**	($300,000 - $120,000)/$300,000 = **60%**
Decrease in installment accounts receivable		60% × $1,000,000 = **$600,000**
Remaining 2001 installment sales receivable		$1,000,000 - $600,000 = **$400,000**
2002 Ending installment sales receivable balance	**$1,000,000**	$1,100,000 + 400,000 **$1,500,000**

E3-7. Determining realized gross profit on installment sales

(AICPA adapted)

The cash collections and realized gross profit amounts are computed below.

Installment sales	$280,000/.4 = **$700,000**
Cash collections	$700,000 - $400,000 = **$300,000**
Percentage of installment sales collected	$300,000/$700,000 = **42.86%**
Amount of gross profit to be recognized	42.86% × $280,000 = **$120,000**

E3-8. Determining deferred franchise fee revenue

Revenue from franchise sales is recognized when all material obligations of the franchisor have been substantially performed. The $60,000 down payment is revenue, because it is nonrefundable. The remaining payments are shown as unearned at their present value of $72,000.

E3-9. Determining revenue recognized with advanced fees

Revenue is recognized evenly over the contract year as it is earned at $45 per month = $540/12 months (when services are performed) and realized (cash collected) or realizable (accounts receivable).

E3-10. Determining deferred service contract revenue

When service contracts are sold, the entire proceeds are reported as deferred revenue. Revenue is recognized, and deferral reduced as the service is performed. Since repairs are made evenly (July 1 is average date) only 1/2 of the 40% of repairs will be in 2001.

2001 deferral ($600 x 1,000)	$600,000
Earned in 2001 (600,000 x 40% x 1/2)	(120,000)
Deferral 12-31-2001	$480,000

E3-11. Determining accounts receivable and deferred gross profit under installment sales

Under installment accounting, neither revenue nor profit is recognized at the time a sale is made, but rather when cash is actually collected. The total gross profit on the installment sales equals $560,000 [40% x $1,400,000]. Of that amount, $240,000 was realized, leaving $320,000 [$560,000 - $240,000] as deferred gross profit.

The installment sales collected in 2001 is the realized gross profit divided by the gross profit percentage:

$240,000/40% = $600,000.

The balance in the installment receivable account must then be $800,000 [$1,400,000 - $600,000].

E3-12. Determining gross profit and deferred gross profit under the installment Method

Requirement 1:

At December 31, 2000, Baker's deferred gross profit is 40% of the amount owed after the down payment.

Sales	$14,000,000
Down payment	(1,400,000)
Installment accounts receivable	12,600,000
Profit rate	40%
Deferred gross profit on installment receivables	$ 5,040,000

Requirement 2:

For 2002, Baker's realized gross profit consists of collections from both 2001 and 2002 sales. Since the profit percentage (40%) is the same for both years, 40% times 2002 collections of $2,020,000 equals $808,000 of realized gross profit.

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Problems

Problems

P3-1. Income measurement under alternative revenue recognition rules

Computation of net income under production basis

2001:	20,000 units	×	($16.00 - $12.00)	$80,000
2002:	4,000 units	×	($13.00 - $16.00)[1]	-12,000
Total income				$68,000

[1] Revision in expected revenue from liquidation sale.

Computation of net income under sales or delivery basis

2001:	16,000 units	×	($16.00 - $12.00)	$64,000
2002:	4,000 units	×	($13.00 - $12.00)	4,000
Total income				$68,000

Computation of net income under cash collection basis

2001:	14,000 units	×	($16.00 - $12.00)			$56,000
2002:	2,000[2] units	×	($16.00 - $12.00)	=	$8,000	
	4,000[3] units	×	($13.00 - $12.00)	=	4,000	12,000
Total income						$68,000

[2] 16,000 units sold – 14,000 units for which cash collections were received in 2001 = 2000 units for which collection occurred in 2002.
[3] 20,000 units produced – 16,000 units sold.

P3-2. Income determination under alternate bases of revenue recognition

Requirement 1: Income on a production basis

Agri Pro
Income Statement
Production Basis

Revenues:		
Wheat sold: 10,000 bu. @ $2.40 =		$24,000
Wheat produced and in inventory: 5,000 bu. @ ($3.00 - $.10)[1] =		14,500
Total revenues		$38,500
Cost of goods produced:		
Depreciation on equipment	$3,000	
Other production costs: 15,000 bu. @ $.50 =	7,500	(10,500)
Gross profit		28,000
Selling and delivery expense: 10,000 bu. @ $.10 =	$1,000	
Miscellaneous administrative expense	4,000	
Interest expense	5,000	(10,000)
Net income		$18,000

Alternate Solution
Production Basis

Sales revenue: 10,000 bu. @ $2.40 =		$24,000
Cost of goods sold:		
Depreciation: 10,000 bu. @ $.20[2] =	$2,000	
Other production costs: 10,000 bu. @ $.50 =	5,000	(7,000)
Gross profit		$17,000
Selling and delivery expense: 10,000 bu. @ $.10 =	1,000	
Miscellaneous administrative expense	4,000	
Interest expense	5,000	(10,000)
Operating income		7,000
Unrealized holding gain on inventory: 5,000 bu. × ($3.00 - $.10 - $.70)[3]		11,000
Net income		$18,000

[1] Revenues should be recorded at net realizable value which is equal to the current selling price of $3.00 per bushel less selling and delivery costs of $.10 per bushel.

[2] Depreciation per bushel produced = $\frac{\$3,000}{15,000}$ = $.20/bu

[3] Other production costs = .50/bu
Production costs/bushel $.70/bu

Inventory carrying (book) value: 5,000 bu. @ $3.00 = $15,000
Accounts receivable: 10,000 bu. @ $2.40 × 1/4 = $6,000

Requirement 2: Income on sales basis

Agri Pro Income Statement Sales Basis		
Revenues: 10,000 bu. @ $2.40 =		$24,000
Cost of goods sold:		
Depreciation on equipment: $\frac{\$3,000}{15,000}$ = $.20/bu. × 10,000 =		2,000
Other production costs: 10,000 bu. @ $.50 =		5,000
Gross profit		$17,000
Selling and delivery expense: 10,000 bu. @ $.10 =	1,000	
Miscellaneous administrative expense	4,000	
Interest expense	5,000	(10,000)
Net income		$7,000

Inventory carrying (book) value: 5,000 bu. @ $.70 = $3,500

Accounts receivable: 10,000 bu. @ $2.40 × 1/4 = $6,000

Requirement 3: Cash collection basis

Agri Pro
Income Statement
Cash Collections Basis

Revenues:		
10,000 bu. @ $2.40 =		$24,000
Less:		
2,500 bu. sold but not collected on (2,500) @ $2.40 =		(6,000)
Revenue from bushels sold and collected		$18,000
Cost of goods sold and collected:		
Depreciation on equipment: $\frac{\$3,000}{15,000} = \$.20 \times 7,500$ bu. =		(1,500)
Other production costs: 7,500 bu. × $.50 =		(3,750)
Gross profit		$12,750
Selling and delivery expense: 10,000 bu. × $.10 =	$1,000	
Miscellaneous administrative expense	4,000	
Interest expense	5,000	(10,000)
Net income		$ 2,750
Inventory carrying (book) value: 5,000 bu. @ $.70 =		$3,500
Accounts receivable: 10,000 bu. @ $2.40 × 1/4 =		$6,000
Less: Deferred gross profit: 10,000 x 1/4 × ($2.40 - $.70) =		(4,250)
Accounts receivable net of deferred gross profit		$1,750

P3-3. Determining pre-tax income and accounts receivable using the installment method

Installment Sales Method	
Sales (700 x $960)	$672,000
Less: 40% sold, but not collected	(268,800)
Revenues from land sold and collected	403,200
Less: Cost of land sold and collected (700 x $350 x 60%)	(147,000)
Gross profit	256,200
Property taxes	(75,000)
Income before income taxes	$181,200
Accounts receivable balance ($672,000 x 40%)	$268,800
Less deferred gross profit (700 x 40% x ($960 - $350))	(170,800)
	$98,000

P3-4. Determining pre-tax income, inventory carrying value, and accounts receivable under sales and production basis.

Requirement 1: Production basis

Production Basis	
Barrels available	30,000
Ending inventory	(6,000)
Barrels sold	24,000
Revenues:	
Barrels sold (24,000 x $28)	$672,000
Barrels in inventory (6,000 x $31)	186,000
Total revenues	858,000
Cost of oils produced:	
Direct production costs (30,000 x $12)	(360,000)
Depreciation expense	(180,000)
Gross profit	318,000
Property taxes	(75,000)
Income before income taxes	$243,000

Alternative Production Basis	
Sales (24,000 barrels x $28.00)	$672,000
Cost of oils produced:	
Direct production costs (24,000 x $12)	(288,000)
Depreciation expense ($180/30 x 24,000)	(144,000)
Gross profit	240,000
Property taxes	(75,000)
	165,000
Unrealized holding gains in inventory [6,000 x ($31-$18)]	78,000
Income before income taxes	$243,000
Accounts receivable balance ($672,000 x 40%)	$268,800
Inventory carrying value (6,000 x $31)	$186,000

Requirement 2: Sales Basis

Sales (completed transaction) Basis	
Barrels available	30,000
Ending inventory	(6,000)
Barrels sold	24,000
Sales (24,000 x $28)	$672,000
Cost of oils produced:	
Direct production costs (24,000 x $12)	(288,000)
Depreciation expense ($180/30 x 24,000)	(144,000)
Gross profit	240,000
Property taxes	(75,000)
Income before income taxes	$165,000
Accounts receivable ($672,000 x 40%)	$268,800
Inventory carrying value:	$108,000
((6,000 x $12) + ($180/30 x 6,000))	

Requirement 3: Installment Basis

Installment Basis	
Barrels available	30,000
Ending inventory	(6,000)
Barrels sold	24,000
Sales (24,000 x $28 x.60)	$403,200
Cost of oils produced:	
Direct production costs (24,000 x $12 x 60%)	(172,800)
Depreciation expense ($180/30 x 24,000 x 60%)	(86,400)
Gross profit	144,000
Property taxes	(75,000)
Income before income taxes	$69,000
Accounts receivable (24,000 x $28 x 40%)	$268,800
Less deferred gross profit [24,000 x 40% x ($28-$18)]	($96,000)
	$172,800
Inventory carrying value:	$108,000
[(6,000 x $12) + ($180/30 x 6,000)]	

P3-5. Percentage-of-completion accounting
(AICPA adapted)

Requirement 1:

1) Contract billings in 2001	$47,000
Accounts receivable: construction contracts	(15,000)
Cash collected	$32,000

Requirement 2:

2) Construction in progress	$50,000
Less: Profit included in above	(10,000)
Costs incurred to date	$40,000

Let X = Total costs on project (in $000)

$$\frac{\$40}{X}(\$800 - X) = \$10$$

$32,000 - $40X = $10X
50X = $32,000
X = $640

Requirement 3:

3) Contract price	$800,000
Total estimated expenses	(640,000)
Estimated total income	$160,000

P3-6. Long-term construction contract accounting
(AICPA adapted)

Completed-Contract Method

Year 2001

DR Construction in progress	$290,000	
CR Cash, payables, materials, etc.		$290,000
DR Accounts receivable	$260,000	
CR Billings on contract		$260,000
DR Cash	$240,000	
CR Accounts receivable		$240,000

Since the project is incomplete, no revenue is recognized for the year 2001.

Balance Sheet Presentation at the End of 2001 Completed-Contract Method	
Current Assets:	
Construction in progress	$290,000
Less: Billings on contract	(260,000)
Unbilled costs of construction	$30,000
Accounts receivable	$20,000

Year 2002

DR Construction in progress	$150,000	
CR Cash, payables, materials, etc.		$150,000
DR Accounts receivable	$265,000	
CR Billings on contract		$265,000
DR Cash	$285,000	
CR Accounts receivable		$285,000
DR Billings on contract	$525,000	
CR Construction in progress		$440,000
CR Income on long-term construction contracts		85,000

Alternate entry:

DR Construction expense	$440,000	
DR Billings on contract	525,000	
CR Construction in progress		$440,000
CR Construction revenue		525,000

Percentage-of-Completion Method

Year 2001

DR Construction in progress	$290,000	
CR Cash, payables, materials, etc.		$290,000
DR Accounts receivable	$260,000	
CR Billings on contract		$260,000
DR Cash	$240,000	
CR Accounts receivable		$240,000
DR Construction in progress [1]	$60,000	
CR Income on long-term construction contracts		$60,000

Alternate entry:

DR Construction in progress [1]	$ 60,000	
DR Construction expense	290,000	
CR Construction revenue		$350,000

[1] Contract price		$525,000
- Actual costs to date	($290,000)	
- Estimated costs to complete	(145,000)	
Total estimated costs of project		(435,000)
Estimated total gross margin		$90,000

Revenue earned during the period: ($290,000/$435,000) × $525,000 = $350,000

Gross margin earned during the period: ($290,000/$435,000) × $90,000 = $60,000

Balance Sheet Presentation at the End of 2001
Percentage-of-Completion Method

Current Assets:	
Construction in progress	$350,000
Less: Billings on contract	(260,000)
Unbilled costs of construction	$90,000
Accounts receivable	$20,000

Year 2002

DR Construction in progress	$150,000	
CR Cash, payables, materials, etc.		$150,000
DR Accounts receivable	$265,000	
CR Billings on contract		$265,000
DR Cash	$285,000	
CR Accounts receivable		$285,000
DR Construction in progress	$25,000	
CR Income on long-term construction contracts		$25,000

Alternate Entry:

DR Construction in progress	$ 25,000	
DR Construction expense	150,000	
CR Construction revenue		$175,000

	Total	2001	2002
Construction revenue	$525,000	$350,000	$175,000
Construction expense	440,000	290,000	150,000
Gross margin	$ 85,000	$ 60,000	$ 25,000

P3-7. Determining income under installment sales method (AICPA adapted)

Income before income taxes on installment sale contract:

Sales	$556,000
Cost of sales	417,000
Gross profit	139,000
Interest income (from following calculations)	27,360
Income before income taxes	$166,360

Calculations to determine interest income on installment sale contract:

Cash selling price	$556,000
Less: July 1, 2001, payment	100,000
	456,000
Interest rate	12%
Annual interest	$ 54,720
Interest July 1, 2001, to December 31, 2001 ($54,720 × 1/2)	$ 27,360

P3-8. Revenue recognition for goods on consignment

Requirement 1:

Englewood Marine
Financial Summary

Description	Quarter Ended July 31	Quarter Ended October 31
Revenues	$ 392,000[1]	$ 700,000[2]
Cost of goods sold		
Sales x (1-.30)	(274,400)	(490,000)
Gross profit	$ 117,600	$ 210,000

[1] 17 boats shipped - 3 boats in inventory = 14 boats sold x $28,000 = $392,000
[2] 41 boats shipped - 14 boats previously sold - 2 boats in inventory = 25 boats sold x $28,000 = $700,000

Requirement 2:

Since the boats were on consignment to the dealers, Englewood Marine still owns them and should include the boats in its finished goods – consigned inventory. The boats would be valued at cost as follows:

Englewood Marine
Boats on Consignment

Description	July 31	October 31
Selling price per boat	$ 28,000	$ 28,000
Number of boats	x 3	x 2
	84,000	56,000
Less gross profit @ 30%	(25,200)	(16,800)
Cost of boats on consignment (Inventory)	$ 58,800	$ 39,200

P3-9. Do existing receivables represent real sales

Requirement 1:

Mogul's fourth quarter sales to Composite should include only the deliveries made during that quarter since the material was sold f.o.b. Composite's receiving dock. Sales for the fourth quarter of 2001 would be $281,000. Determined as follows:

Mogul Chemical Company
December 2000 - Sales to Composite, Inc.

Date Delivered	Pounds	Price per Pound	Sales
November 30, 2001	75,000	$1.00	$75,000
December 7, 2001	80,000	$1.00	80,000
December 14, 2001	60,000	$1.10	66,000
December 21, 2001	50,000	$1.20	60,000
December 2001 Sales			**$281,000**

Requirement 2:

It appears that Mogul has met several criteria required to recognize the Composite transaction as revenue during calendar year 2001, including:

- Having a written fixed commitment and specific written delivery terms from the buyer;
- The *critical event* has taken place, the production of the required materials in accordance with the buyers written instructions, so that the earning process appears to be complete except for delivery of the goods;
- The amount to be collected is reasonably assured and is *measurable* with a reasonable degree of reliability;
- Material destined for Composite is completely segregated and not subject to being used to fill other orders;
- Material destined for Composite is complete and ready for shipment.

Requirement 3:

Consistent with guidance in SEC SAB No. 101, Mogul should not include the Composite transaction as a receivable and sale in calendar year 2001 for the following reasons:

1. Mogul retained risk of ownership.
2. Composite did not request the "bill and hold" arrangement. Mogul did this unilaterally.

3. Mogul accepted Composite's purchase order and delivery terms. Composite was unable to take delivery of the material early because it lacked storage facilities for raw material inventories.

If Mogul included this transaction in 2001 business and if the amount were material, an adjustment would be required to correctly report this as 2002 business.

P3-10. Revenue recognition on layaways

Requirement 1:

February 28, 2001:

DR Layaway-- merchandise inventory	$49,000	
CR Retail inventory		$49,000
DR Cash	$45,000	
CR Customer deposits (unearned revenue)		$45,000
DR Customer deposits (unearned revenue)	$30,000	
CR Sales revenue		$30,000
DR Cost of goods sold	$24,000	
CR Layaway-- merchandise inventory		$24,000

March 31, 2001:

DR Layaway-- merchandise inventory	$50,000	
CR Retail inventory		$50,000
DR Cash	$67,000	
CR Customer deposits (unearned revenue)		$67,000
DR Customer deposits (unearned revenue)	$70,000	
CR Sales revenue		$70,000
DR Cost of goods sold	$56,000	
CR Layaway-- merchandise inventory		$56,000

April 30, 2001:

DR Layaway-- merchandise inventory	$40,000	
CR Retail inventory		$40,000
DR Cash	$51,000	
CR Customer deposits (unearned revenue)		$51,000
DR Customer deposits (unearned revenue)	$60,000	
CR Sales revenue		$60,000
DR Cost of goods sold	$48,000	
CR Layaway-- merchandise inventory		$48,000

Requirement 2:

DW Hooks
Revenues Earned and Reconciliation of Layaways and
Customer Deposits from January 31, 2001 to April 30, 2001

	Layaway Inventory	Customer Deposits	Sales Revenue Earned
Balance at January 31, 2001	$ 72,000	$ 55,000	
• February layaways	49,000		
• February deposits		45,000	
• February deliveries	(24,000)	(30,000)	$ 30,000
Balance at February 28, 2001	97,000	70,000	30,000
• March layaways	50,000		
• March deposits		67,000	
• March deliveries	(56,000)	(70,000)	70,000
Balance at March 31, 2001	91,000	67,000	100,000
• April layaways	40,000		
• April deposits		51,000	
• April deliveries	(48,000)	(60,000)	60,000
Balance at April 30, 2001	$ 83,000	$ 58,000	$ 160,000

Requirement 3:
The amount of cash received as a deposit should be recognized as a liability and titled such as “Customer deposits – layaway sales” or “Unearned revenue – layaway sales.” The amount would be reported on Hook's balance sheet as a liability.

C3-1. **Smith's Farm:** Alternate bases of income determination

Requirement 1:

	Production	Sales	Collection
Realized revenue	$108,000	$108,000	$72,000
Cost of goods sold	(21,000)	(21,000)	(14,000)
Gross profit	$87,000	$87,000	$58,000
Other expenses	(25,000)	(25,000)	(25,000)
Value added to unsold production [($3.60 - $.20) - $.50]	29,000	—	—
Net income	$91,000	$62,000	$33,000

Requirement 2:

Ending inventory			
($3.60 - $.20) × 10,000 bu.	$ 34,000		
$.50 × 10,000 bu.		$5,000	$5,000
Accounts receivable	$36,000	$36,000	$36,000
Less: Deferred profit on sale ($3.60 - $.70) × 10,000 bu.	—	—	($29,000)
	$36,000	$36,000	$7,000

Requirement 3:

	Production	Sales
Realized revenues	$ 28,000	$28,000
Less: Carrying value of inventory at 12/31/01	(34,000)	(5,000)
Less: Delivery costs	(2,000)	(2,000)
Net income (loss)	($8,000)	$21,000

The $8,000 loss on the production basis is straightforward. It represents the speculative loss of $.80 per bushel (i.e., $3.40 - $2.60) [1] which occurred during 2002 times the 10,000 bushels that were held in inventory.

[1] $3.40 and $2.60 represent the net realizable values at the start of the year and the time of sale, respectively.

The $21,000 profit on the sales basis is more difficult to explain. It can't be attributable to 2001 farming profit since Smith didn't farm in 2002. Similarly, it can't be considered speculative profit since Smith incurred a 2002 loss of $8,000 on speculation. The $21,000 figure is really a mixture of $29,000 of unrecognized 2001 farming profit and the 2002 speculative loss of $8,000. Thus, the sales basis does not provide a clear delineation of profit by source.

To generalize beyond farm settings, just as Smith was in two "businesses" (farming and speculation) so too most manufacturing concerns—albeit reluctantly—are in two businesses (operations and holding assets). Continuing the analogy, just as the sales basis "mixes" the profit source in a farm setting, so too the sales basis "mixes" the profit source in manufacturing settings. Insofar as these two profit sources (operations and holding assets) entail different risks and patterns of repeatability, then the sales basis provides a precarious basis for risk evaluation and cash flow forecasting.

C3-2. Determining gross profit under the percentage-of-completion method

Requirement 1:

London, Inc.
Schedule of Gross Profit (Loss)

	Beta	Gamma
For the Year Ended September 30, 2002:		
Estimated gross profit (loss):		
Contract price	$600,000	$800,000
Less: estimated total costs	400,000	820,000
Estimated gross profit (loss)	$200,000	$(20,000)
Percent Complete:		
Costs incurred to date	$360,000	$410,000
Total costs	400,000	820,000
Percent complete	90%	50%
Gross profit (loss) recognized	$180,000	($20,000)
For year ended September 30, 2003:		
Estimated gross profit (loss):		
Contract price[1]	$560,000	$840,000
Less total costs	450,000	900,000
Estimated gross profit (loss)	$110,000	$(60,000)
Percent complete:		
Cost incurred to date	$450,000	$720,000
Total costs	450,000	900,000
Percent complete	100%	80%
Gross profit (loss)	110,000	(60,000)
Less gross profit (loss) recognized In prior year	(180,000)	- (20,000)
Gross profit (loss) recognized	($70,000)	($40,000)

[[1]Original contract price ($600,000) minus late penalty for 4 weeks (4 X $10,000) = $560,000]

Requirement 2:

London Inc.
Schedule of Selected Balance Sheet Accounts
September 30, 2002

Accounts receivable	$115,000
($315,000 + $440,000 - $275,000 - $365,000 = $115,000)	
Costs and estimated earnings in excess of billings for Beta:	
Construction in progress	$540,000
Less: Billings	315,000
Costs and estimated earnings in excess of billings	$225,000
Billings in excess of costs and estimated earnings for Gamma:	
Construction in progress	$390,000
Less: Billings	440,000
Billings in excess of cost	($ 50,000)

Requirement 3:

Under the completed-contract method London would recognize a loss of $20,000 on the Gamma project in 2002. In 2003, London would recognize $110,000 of profit on Beta ($560,000 - $450,000 = $110,000) and a $40,000 loss on Gamma ($60,000 total loss minus $20,000 recognized in 2002) for a total profit of $70,000.

C3-3. Stewart & Stevenson Services Inc. (KR): Understanding accounts used for long-term construction contract accounting

Requirement 1:

Stewart and Stevenson Services, Inc.

Construction in Progress Inventory

Beginning balance	$80,623	$689,362	Projects completed **(plug number)**
Costs added	685,879		
Profit added	126,647		
Ending balance	$203,787		

Billings on Contract (Progress Payments)

		$55,258	Beginning balance
Projects completed (from above)	$689,362		
		798,182	Progress billings **(plug number)**
		$164,078	Ending balance

Accounts Receivable

Beginning balance	$121,030	$776,046	Cash collected **(plug number)**
Progress billings (from above)	798,182		
Ending balance	$143,166		

Requirement 2:

Gross margin under the completed-contract method:

Beginning accrued profits + Gross margin under the percentage-of-completion method - Ending accrued profits

= $9,857 + $126,647 - $13,117 = $123,387

Sales revenue = $689,362 (See T-account for construction in progress)

Cost of goods sold = Sales revenue - Gross margin = $565,975

Gross margin rate = 17.9%

Requirement 3:

Effects on the accounting equation:

Decrease in construction in progress (Accrued profits recorded under percentage of completion method as per balance sheet)	=	\$13,117
Decrease in deferred tax liability (\$13,117 × .40)	=	\$5,247
Decrease in retained earnings (\$13,117 - \$5,247)	=	\$7,870

The effect on deferred tax liability can be skipped for now.

Requirement 4:

Stewart & Stevenson is one of a few long-term construction contract companies that explicitly provide information on the magnitude of accrued profits that is included in the inventory account. Consequently, in (2), we were able to precisely estimate their gross margin under the completed-contract approach. This part considers a more realistic scenario when such information is not available.

Estimation of gross margin under the completed-contract method:

Using the Year 2 gross margin rate: \$689,362 (sales) × 15.6% =\$107,540

Using the Year 1 gross margin rate: \$689,362 (sales) × 17.0% =\$117,192

Requirement 5:

Obviously, the answer to part (2) provides the most accurate estimate of the profits under the completed contract method. Of the two estimates provided in (4), the one obtained using the Year 1 gross margin rate is closer to the gross margin in (2). This is consistent with the intuition that the higher gross margin contracts that were started in Year 1 are being completed during Year 2.

Requirement 6:

Estimation of gross margin under the cash collection basis:

Using Year 2 gross margin rate: \$776,046 (collections) × 5.6% = \$121,063

Using Year 1 gross margin rate: \$776,046 (collections) × 17.0% = \$131,928

C3-4. Revenue recognition-membership fees

Numbers are rounded for presentation

Requirement 1:

Uncle Mike's
Membership Fees Earned

Description	Quarter Ended 3/31/01	6/30/01	9/30/01	12/31/01	Year Ended 12/31/01
Memberships sold	5,500	2,400	2,000	2,500	12,400
Fees collected	$ 203,334	$ 65,667	$ 31,666	$16,667	$317,334
Est. Customer refunds					
(Fees collected x 30%)	(61,000)	(19,700)	(9,500)	(5,000)	(95,200)
Net unearned revenue	$ 142,334	$ 45,967	$ 22,166	$11,667	$222,134
Earned revenue from:					
1/1/01 to 3/31/01	$ 26,834	$ 38,500	$ 38,500	$38,500	$142,334
4/1/01 to 6/30/01		12,367	16,800	16,800	45,967
7/1/01 to 9/30/01			8,166	14,000	22,166
10/1/01 to 12/31/01				11,667	11,667
Membership fees earned	$ 26,834	$ 50,867	$ 63,466	$80,967	$222,134 [1]

[1] The total net membership fees earned are based on memberships actually sold minus the estimated cancellations. Even though actual cancellations turn out to be different from estimates we do not adjust the net membership revenues for this difference. Over time, we expect deviations of actual from estimated cancellations to net to zero.

Uncle Mike's
Membership Fees Earned
Quarter Ended March 31, 2001

Description	Jan	Feb	March	**Quarter 1 Information**
Memberships sold	2,000	2,000	1,500	**5,500**
Price	$ 40.00	$ 36.67	$ 33.33	
Fees collected (rounded)	$80,000	$73,334	$50,000	**$ 203,334**
Less estimated refunds				
at 30%	(24,000)	(22,000)	(15,000)	**(61,000)**
Unearned revenue	56,000	51,334	35,000	**$ 142,334**
Remaining months	12	11	10	
Earned per month	$ 4,667	$ 4,667	$ 3,500	
Membership fee earned:				
Month 1	$ 4,667	$ 0	$ 0	**$ 4,667**
Month 2	4,667	4,667	0	**9,334**
Month 3	4,666	4,667	3,500	**12,833**
Total earned	$14,000	$ 9,334	$ 3,500	**$ 26,834**

Uncle Mike's

Membership Fee Detail

Month	Quarter 1 Information	April	May	June	Quarter 2 Information	July	August	September	Quarter 3 Information	October	November	December	Quarter 4 Information	Year Ended 12/31/01
Memberships sold	**5,500**	1,000	900	500	**2,400**	500	500	1,000	**2,000**	800	900	800	**2,500**	**12,400**
Price		$ 30.00	$26.67	$23.33		$20.00	$16.67	$13.33		$10.00	$6.67	$ 3.33		
Total (numbers rounded)	**$203,334**	$30,000	$24,000	$11,667	**$65,667**	$10,000	$8,333	$13,333	**$31,666**	$8,000	$6,000	$2,667	**$16,667**	**$317,334**
Estimated customer refunds (Total x 30%)	**(61,000)**	9,000	7,200	3,500	**(19,700)**	3,000	2,500	4,000	**(9,500)**	2,400	1,800	800	**(5,000)**	**(95,200)**
Net unearned revenue	**$142,334**	21,000	16,800	8,167	**$45,967**	7,000	5,833	9,333	**$22,166**	5,600	4,200	1,867	**$11,667**	**222,134**
Months		9	8	7		6	5	4		3	2	1		
Earned per month		2,333	2,100	1,166		1,167	1,167	2,333		1,867	2,101	1,865		
Membership fees earned by period														
1/1/01 - 1/31/01	26,834				38,500				38,500				38,500	
Quarter 1	**$ 26,834**													26,834
4/1/01 - 6/30/01					12,367				16,800				16,800	
Quarter 2					**$50,867**									50,867
7/1/01 - 9/30/01									8,166				14,000	
Quarter 3									**$63,466**					63,466
10/1/01 - 12/31/01													11,667	
Year ended 12/31/01													**$80,967**	80,967
														$222,134

Requirement 2:
The membership fee should be credited to different balance sheet accounts. The portion that represents potential customer refunds (30%) should be recorded in a monetary liability account such as “Estimated customer refunds payable” while the remaining amount should be recorded in a nonmonetary liability account such as “unearned revenue.” As the membership fees are earned, they would be reported as revenue on the income statement and the “unearned revenue” account would be reduced appropriately.

Requirement 3:
In essence Uncle Mike’s is unable to demonstrate that the amount to be collected is *measurable* because it cannot accurately estimate membership refunds. Since customers have the unilateral right to cancel their membership at any time and receive a full refund up to the last day of the year, the membership fee cannot be fixed or determinable at any point before the end of the year. Accordingly, the revenue from such transactions should not be recognized in earnings prior to the refund privileges expiring on December 31. Net revenue earned would be based on actual memberships sold minus actual refunds provided, as detailed in the following schedule:

Uncle Mike's
Membership Fees Earned
Quarter Ended March 31, 2001

Description	Jan	Feb	March	**Quarter 1 Information**
Memberships sold	2,000	2,000	1,500	**5,500**
Price	$ 40.00	$ 36.67	$ 33.33	
Unearned revenues	$ 80,000	$ 73,334	$ 50,000	**$ 203,334**

Description	April	May	June	**Quarter 2 Information**
Memberships sold	1,000	900	500	**2,400**
Price	$ 30.00	$ 26.67	$ 23.33	
Unearned revenues	$ 30,000	$ 24,000	$ 11,667	**$ 65,667**

Description	July	Aug	Sept	**Quarter 3 Information**
Memberships sold	500	500	1,000	**2,000**
Price	$ 20.00	$ 16.67	$ 13.33	
Unearned revenues	$ 10,000	$ 8,333	$ 13,333	**$ 31,666**

Description	Oct	Nov	Dec	**Quarter 4 Information**
Memberships sold	800	900	800	**2,500**
Price	$ 10.00	$ 6.67	$ 3.33	
Unearned revenues	$ 8,000	$ 6,000	$ 2,667	**$ 16,667**

Total unearned revenues	**$ 317,334**
Less: actual refunds	**(87,085)**
Net earned revenue on 12/31/2001	**$ 230,249**